

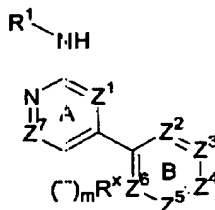
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CENTRAL FAX CENTERApplicants: Mark Ledebor et al.
Application No.: 10/700,333

DEC 21 2006

AMENDMENTS TO THE CLAIMS

Please replace all prior versions and listings of claims with the amended claims as follows:

1. (Currently amended) A compound of formula I:



I

or a pharmaceutically acceptable salt thereof,

wherein:

R^1 is a phenyl, cyclohexyl, cyclopentyl, pyridyl, morpholino, piperazinyl, or piperidinyl group, wherein R^1 is $Q-Ar^1$;

Q is a C_{1-2} alkylidene chain wherein one methylene unit of Q is optionally replaced by O , NR , $NRCO$, $NRCONR$, $NRCO_2$, CO , CO_2 , $CONR$, $OC(O)NR$, SO_2 , SO_2NR , $NRSO_2$, $NRSO_2NR$, $C(O)C(O)$, or $C(O)CH_2C(O)$;

Ar^1 is a 5-7 membered saturated, partially unsaturated, or fully unsaturated monocyclic ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur, or an 8-12 membered saturated, partially unsaturated, or fully unsaturated bicyclic ring system having 0-5 heteroatoms independently selected from nitrogen, oxygen, or sulfur, wherein Ar^1 is optionally substituted with q independent occurrences of $Z-R^Z$; wherein q is 0-5, Z is a bond or is a C_1-C_6 alkylidene chain wherein up to two non-adjacent methylene units of Z are optionally and independently replaced by CO , CO_2 , $COCO$, $CONR$, $OCONR$, $NRNR$, $NRNRCO$, $NRCO$, $NRCCO_2$, $NRCONR$, SO , SO_2 , $NRSO_2$, SO_2NR , $NRSO_2NR$, O , S , or NR ; and each occurrence of R^Z is independently selected from R' , halogen, NO_2 , CN , OR' , SR' , $N(R')$, $NR'COR'$, $NR'CON(R')$, $NR'CON(R')_2$,

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$\text{NR}'\text{CO}_2\text{R}'$, COR' , $\text{CO}_2\text{R}'$, OCOR' , $\text{CON}(\text{R}')_2$, $\text{OCON}(\text{R}')_2$, SOR' , $\text{SO}_2\text{R}'$,
 $\text{SO}_2\text{N}(\text{R}')_2$, $\text{NR}'\text{SO}_2\text{R}'$, $\text{NR}'\text{SO}_2\text{N}(\text{R}')_2$, COCOR' , or $\text{COCH}_2\text{COR}'$;

each occurrence of R is independently hydrogen or an optionally substituted C_{1-6} aliphatic group; and each occurrence of R' is independently hydrogen or an optionally substituted C_{1-6} aliphatic group, a 3-8-membered saturated, partially unsaturated, or fully unsaturated monocyclic ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur, or an 8-12 membered saturated, partially unsaturated, or fully unsaturated bicyclic ring system having 0-5 heteroatoms independently selected from nitrogen, oxygen, or sulfur; or R and R' , two occurrences of R, or two occurrences of R' , are taken together with the atom(s) to which they are bound to form an optionally substituted 3-12 membered saturated, partially unsaturated, or fully unsaturated monocyclic or bicyclic ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

Z^1 is N;

Z^7 is $\text{C}(\text{U})_n\text{R}^Y$;

T and U are each independently a bond or a saturated or unsaturated C_{1-6} alkylidene chain, wherein up to two methylene units of the chain are optionally and independently replaced by CO, CC_2 , COCO, CONR, OCONR, NRNR, NRNRCO, NRCO, NR CO_2 , NRCONR, SO, SO_2 , NRSO_2 , SO_2NR , NRSO_2NR , O, S, or NR;

m and n are each independently 0 or 1;

R^X and R^Y are each independently selected from R or Ar^1 ;

Z^2 is N or CR^2 ; Z^3 is N or CR^3 ; Z^4 is N or CR^4 ; Z^5 is N or CR^5 ; and Z^6 is N or CR^6 , wherein each occurrence of R^2 , R^3 , R^4 , R^5 or R^6 is independently R^U or $(\text{V})_p\text{R}^V$, provided that a) no more than three of Z^2 , Z^3 , Z^4 , Z^5 or Z^6 is N, and b) at least one of Z^3 , Z^4 or Z^5 is CR^3 , CR^4 , or CR^5 , respectively, and at least one of R^3 , R^4 , or R^5 is R^U ,

each occurrence of R^U is NRCOR^7 , $\text{CONR}(\text{R}^7)$, $\text{SO}_2\text{NR}(\text{R}^7)$, NRSO_2R^7 ,

$\text{NRCONR}(\text{R}^7)$, $\text{NRSO}_2\text{NR}(\text{R}^7)$, or $\text{CONRNR}(\text{R}^7)$, wherein R^7 is $(\text{CH}_2)_t\text{Y-R}^8$, and t is 0, 1, or 2, Y is a bond or is O, S, NR^9 , $-\text{OCH}_2-$, $-\text{SCH}_2-$, $-\text{NR}^9\text{CH}_2$, $\text{O}(\text{CH}_2)_2-$, -

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$S(CH_2)_2$, or $-NR^9(CH_2)_2$, and R^8 is Ar^2 , or R^8 and R^9 , taken together with the nitrogen atom, form an optionally substituted 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur;

each occurrence of V is a bond or a saturated or unsaturated C_{1-6} alkylidene chain, wherein up to two methylene units of the chain are optionally and independently replaced by CO, CO_2 , COCO, CONR, OCONR, NRNR, NRNRCO, NRCO, NR CO_2 , NRCONR, SO, SO_2 , NRSO $_2$, SO_2NR , NRSO $_2NR$, O, S, or NR;

each occurrence of p is 0 or 1;

each occurrence of R^V is R or Ar^2 ; and

Ar^2 is a 5-7 membered saturated, partially unsaturated, or fully unsaturated monocyclic ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur, or an 8-12 membered saturated, partially unsaturated, or fully unsaturated bicyclic ring system having 0-5 heteroatoms independently selected from nitrogen, oxygen, or sulfur; wherein Ar^2 is optionally substituted with r independent occurrences of $W-R^W$; wherein r is 0-3, W is a bond or is a C_1-C_6 alkylidene chain wherein up to two non-adjacent methylene units of W are optionally replaced by CO, CO_2 , COCO, CONR, OCONR, NRNR, NRNRCO, NRCO, NR CO_2 , NRCONR, SO, SO_2 , NRSO $_2$, SO_2NR , NRSO $_2NR$, O, S, or NR; and each occurrence of R^W is independently selected from R' , halogen, NO_2 , CN, OR', SR', $N(R')_2$, NR'COR', NR'CON(R') $_2$, NR'CO $_2R'$, COR', CO $_2R'$, OCOR', CON(R') $_2$, OCON(R') $_2$, SOR', SO $_2R'$, SO $_2N(R')_2$, NR'SO $_2R'$, NR'SO $_2N(R')_2$, COCOR', or COCH $_2$ COR';

provided that:

- when Z^7 is CH and ring B is phenyl and at least one of R^3 or R^4 is NHCOR 7 , then R^1 is not phenyl only substituted with two or three occurrences of OR'; and
- when Z^7 is CH and ring B is phenyl and at least one of R^3 or R^4 is NHCOR 7 , SO $_2R^7$, CONRR 7 , then R^1 is not phenyl only substituted with one occurrence of -CON(R') $_2$ in the para position.

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2-4. (Canceled)

5. (Currently amended) The compound of claim 1, wherein R^1 is an optionally substituted ~~from~~ phenyl, cyclohexyl, or pyridyl group.

6. (Original) The compound of claim 1, wherein R^1 is optionally substituted phenyl.

7. (Original) The compound of claim 1, wherein q is 0, 1, 2, or 3 and each independent occurrence of ZR^Z is $C_{1-4}alkyl$, $N(R')_2$, OR' , SR' , $CON(R')_2$, $NR'COR'$, $NR'SO_2R'$, or $SO_2N(R')_2$.

8. (Original) The compound of claim 1, wherein q is 1 and ZR^Z is $-NH_2$, $-OH$, $C_{1-4}alkoxy$, or $-S(O)_2NH_2$.

9. (Original) The compound of claim 1, wherein q is 1, and ZR^Z is in the meta position and ZR^Z is $-NH_2$, $-OH$, $C_{1-4}alkoxy$, or $-S(O)_2NH_2$.

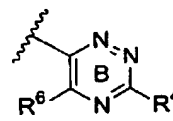
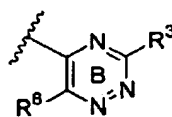
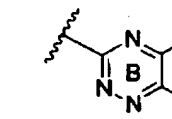
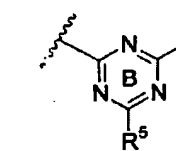
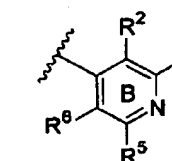
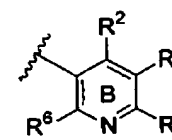
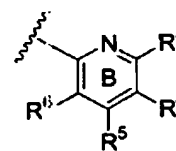
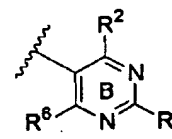
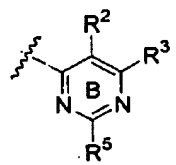
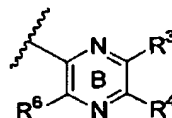
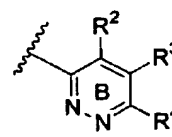
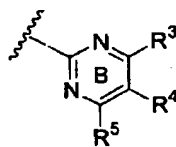
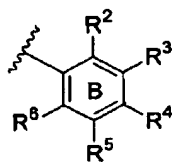
10. (Original) The compound of claim 1, wherein $(T)_mR^X$ and $(U)_nR^Y$ are hydrogen, halogen, NO_2 , CN , OR , SR or $N(R)_2$, or $C_{1-4}aliphatic$ optionally substituted with oxo, OR , SR , $N(R)_2$, halogen, NC_2 or CN .

11. (Original) The compound of claim 1, wherein $(T)_mR^X$ and $(U)_nR^Y$ are each independently hydrogen, Me, OH, OMe or $N(R)_2$.

12. (Original) The compound of claim 1, wherein $(T)_mR^X$ and $(U)_nR^Y$ are each hydrogen.

13. (Original) The compound of claim 1, wherein ring B is one of rings i-xiv:

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14. (Original) The compound of claim 1, wherein t is 0, Y is a bond, and R⁸ is an optionally substituted aryl or heteroaryl moiety.

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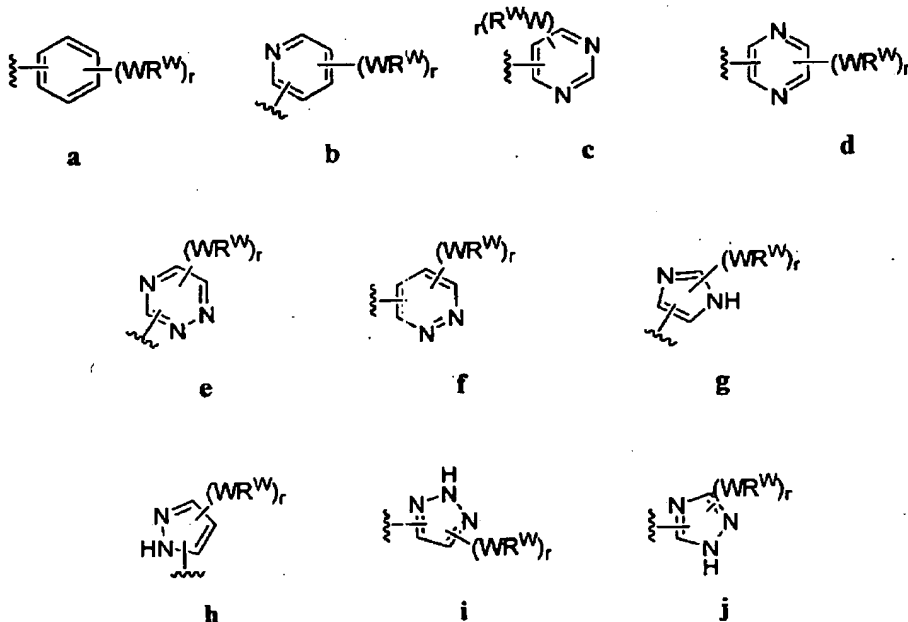
15. (Original) The compound of claim 1, wherein t is 0, Y is a bond, and R^8 is an optionally substituted heteroaryl moiety.

16. (Original) The compound of claim 1, wherein R^7 is $-\text{CH}_2-\text{Y}-\text{R}^8$, and Y is NR^9 , O or S , and R^8 is an optionally substituted aryl or heteroaryl moiety.

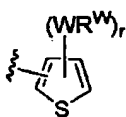
17. (Original) The compound of claim 1, wherein R^7 is $-\text{CH}_2-\text{Y}-\text{R}^8$, and Y is NR^9 , O or S , and R^8 is an optionally substituted aryl moiety.

18. (Original) The compound of claim 1, wherein t is 0 or 1, Y is NR^9 , and R^8 and R^9 , taken together with the nitrogen atom, form a 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur.

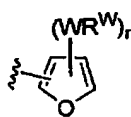
19. (Original) The compound of claim 1, wherein R^8 is a 5- or 6-membered aryl or heteroaryl group having one of the formulae:



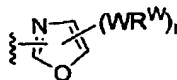
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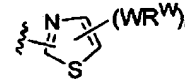
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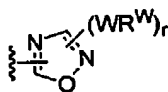
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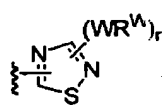
m



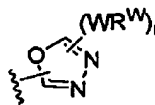
n



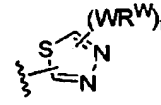
o



p

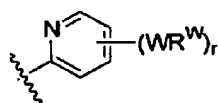


q

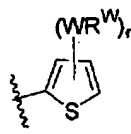


r

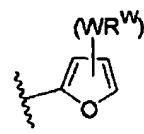
20. (Original) The compound of claim 1, wherein R^8 is a 5- or 6-membered heteroaryl group having one of the formulae:



b-i

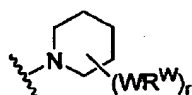


k-i

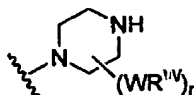


l-i

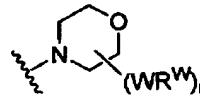
21. (Original) The compound of claim 1, wherein R^8 and R^9 , taken together, form a group having one of the formulae:



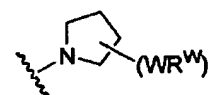
s



t



u



v

22. (Original) The compound of claim 1, wherein r is 0 or 1.

23. (Original) The compound of claim 19, 20, or 21, wherein r is 1, 2, or 3, and each occurrence of halogen, C_{1-4} alkyl, $-(R)_2$, $-OR$, $-SR$, $-SO_2N(R)_2$, $-N(R)SO_2R$, $-N(R)COR$, $-N(R)_2$, $-CH_2OR$, $-CH_2N(R)_2$, or $-CH_2SR$.

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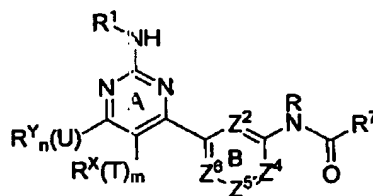
24. (Original) The compound of claim 19, 20, or 21, wherein t is 0, Y is a bond, and R^8 is an optionally substituted heteroaryl moiety selected from one of groups b through r .

25. (Original) The compound of claim 24, wherein R^8 is an optionally substituted heteroaryl group $b-i$, $k-i$, or $l-i$.

26. (Original) The compound of claim 1, wherein t is 1, Y is O, S or NR^9 , and R^8 is optionally substituted phenyl.

27. (Original) The compound of claim 1, wherein t is 0 or 1, Y is NR^9 , and R^8 and R^9 , taken together form an optionally substituted group selected from s , u or v .

28. (Previously presented) The compound of claim 1, wherein Z^3 or Z^5 is CR^3 or CR^5 , respectively, and R^3 or R^5 is $NRC(O)R^7$, wherein R^7 is $(CH_2)_t-Y-R^8$, wherein t is 0, 1 or 2, wherein Y is a bond or is O, S, NR^9 , $-OCH_2-$, $-SCH_2-$, $-NR^9CH_2$, $O(CH_2)_2-$, $-S(CH_2)_2$, or $-NR^9(CH_2)_2$, and wherein R^8 is Ar^2 , or R^8 and R^9 , taken together with the nitrogen atom, form a 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur, and compounds have the formula II-A:

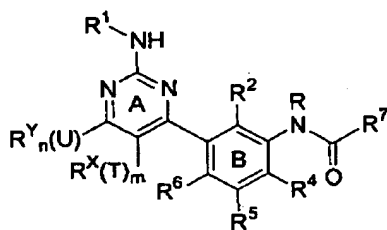


II-A

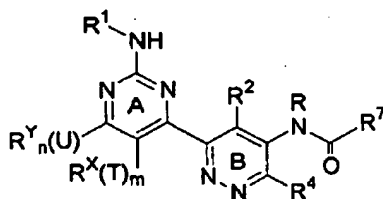
29. (Previously presented) The compound of claim 28, wherein ring B is selected from i , ii , iii , iv , v , vii , $viii$, ix , x , xi , xii , or $xiii$ and compounds have one of formulas

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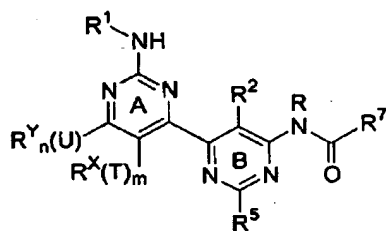
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 II-A-xii, or II-A-xiii:**



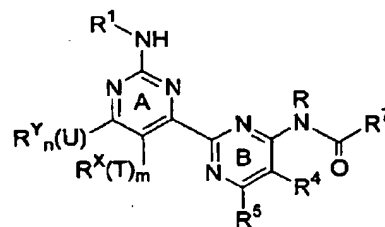
II-A-i



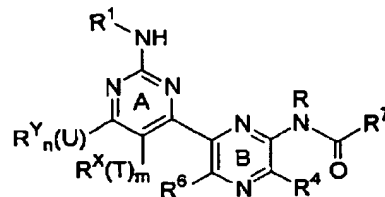
II-A-iii



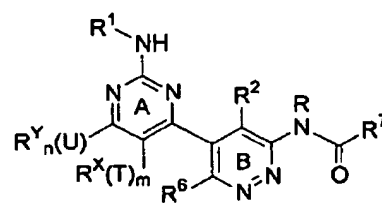
II-A-v



II-A-ii

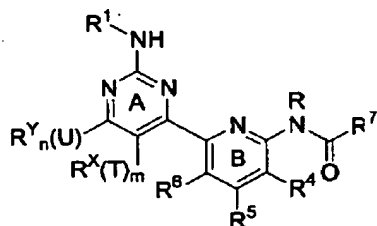


II-A-iv

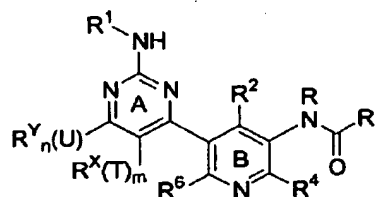


II-A-vii

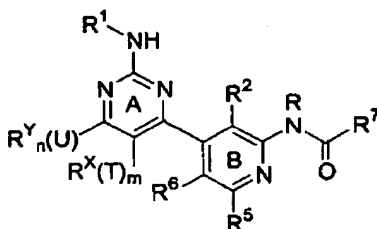
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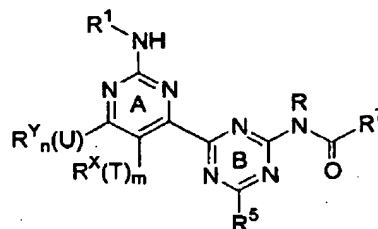
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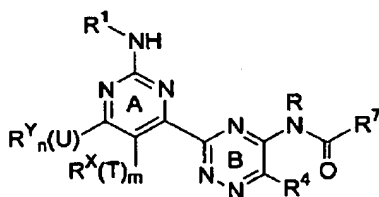
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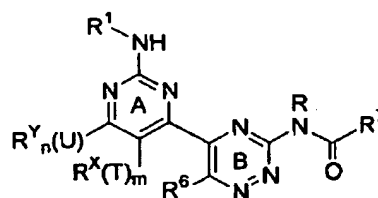
II-A-x



II-A-xi



II-A-xii



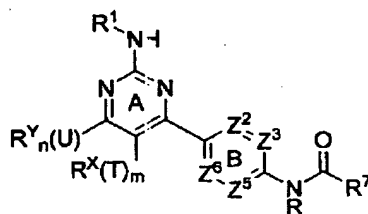
II-A-xiii

30. (Canceled)

31. (Previously presented) The compound of claim 1, wherein Z^4 is CR^4 , and R^4 is $NRC(O)R^7$, wherein R^7 is $(CH_2)_t-Y-R^8$, wherein t is 0, 1 or 2, wherein Y is a bond or is O, S, NR^9 , $-OCH_2-$, $-SCH_2-$, $-NR^9CH_2-$, $O(CH_2)_2-$, $-S(CH_2)_2-$, or $-NR^9(CH_2)_2-$, and

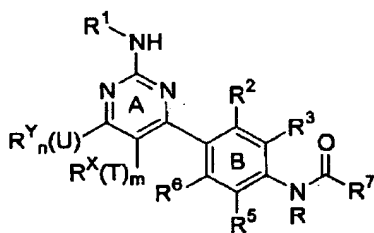
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wherein R^8 is Ar^2 , or R^8 and R^9 , taken together with the nitrogen atom, form a 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur; and compounds have formula II-B:

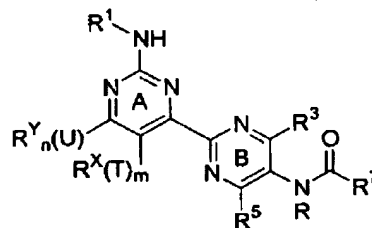


II-B

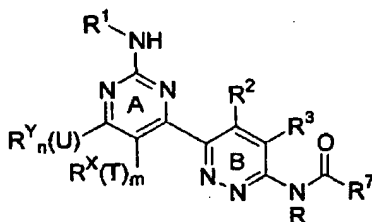
32. (Previously presented) The compound of claim 31, wherein ring B is selected from i, ii, iii, iv, vi, viii, ix, xii, or xiv and compounds have one of formulas II-B-i, II-B-ii, II-B-iii, II-B-iv, II-B-vi, II-B-viii, II-B-ix, II-B-xii, or II-B-xiv:



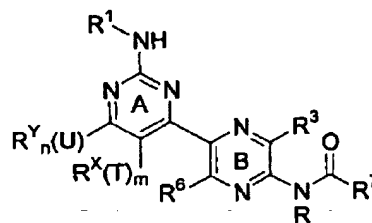
II-B-i



II-B-ii

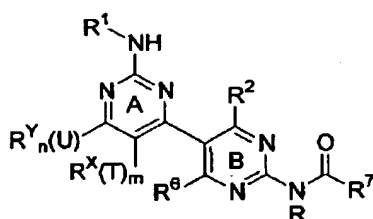


II-B-iii

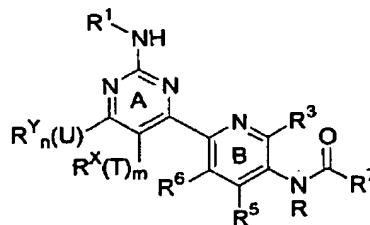


II-B-iv

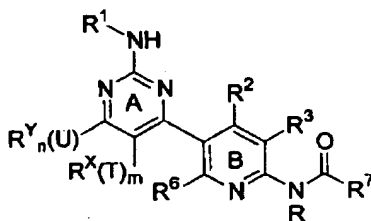
Applicants: Mark Ledebor et al.
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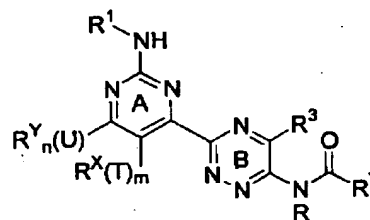
II-B-vi



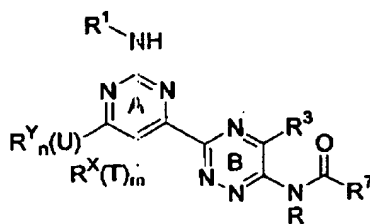
II-B-viii



II-B-ix



II-B-xii



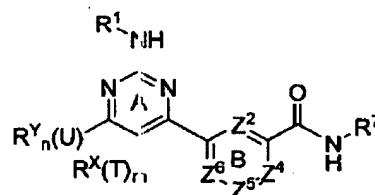
II-B-xiv

33. (Canceled)

34. (Previously presented) The compound of claim 1, wherein Z^3 or Z^5 is CR^3 or CR^5 , respectively, and R^3 or R^5 is $C(O)N(R)(R^7)$, wherein R^7 is $(CH_2)_t-Y-R^8$, wherein t is 0, 1 or 2, wherein Y is a bond or is O, S, NR^9 , $-OCH_2-$, $-SCH_2-$, $-NR^9CH_2$, $O(CH_2)_2$, $-S(CH_2)_2$, or $-NR^9(CH_2)_2$, and wherein R^8 is Ar^2 , or R^8 and R^9 , taken

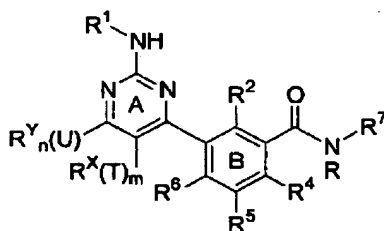
Applicants: Mark Ledebner et al.
 Application No.: 10/700,333

together with the nitrogen atom, form a 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur and compounds have formula II-C:

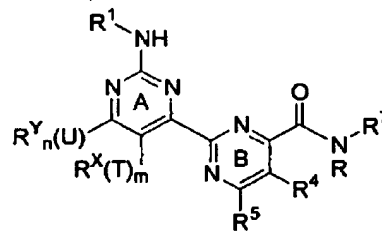


II-C

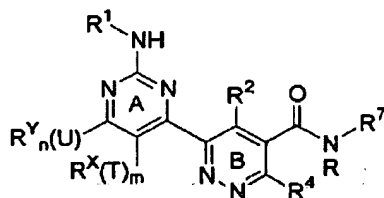
35. (Previously presented) The compound of claim 34, wherein ring B is selected from i, ii, iii, iv, v, vii, viii, ix, x, xi, xii, or xiii and compounds have one of formulas II-C-i, II-C-ii, II-C-iii, II-C-iv, II-C-v, II-C-vii, II-C-viii, II-C-ix, II-C-x, II-C-xi, II-C-xii, or II-C-xiii:



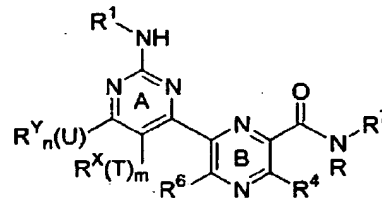
II-C-i



II-C-ii

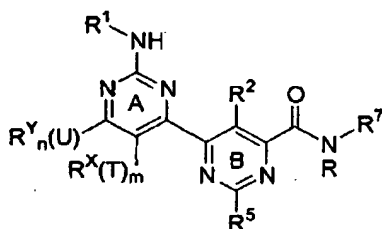


II-C-iii

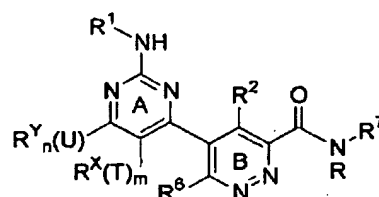


II-C-iv

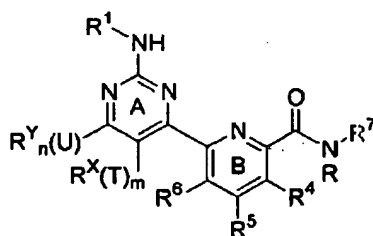
Applicants: Mark Ledebner et al.
Application No.: 10/700,333



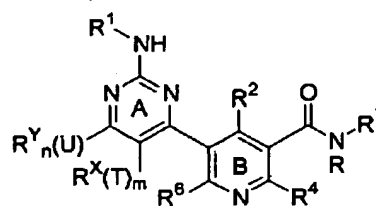
II-C-v



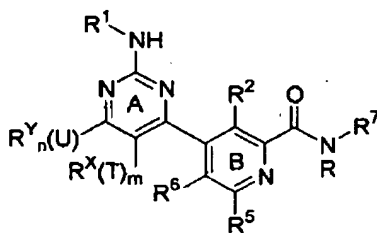
II-C-vii



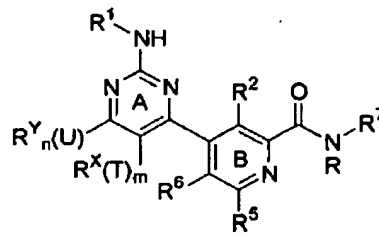
II-C-viii



II-C-ix

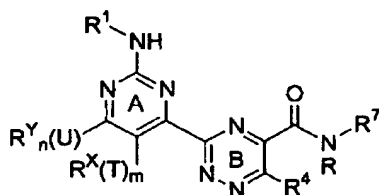


II-C-x

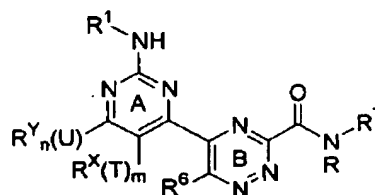


II-C-xi

Applicants: Mark Ledebner et al.
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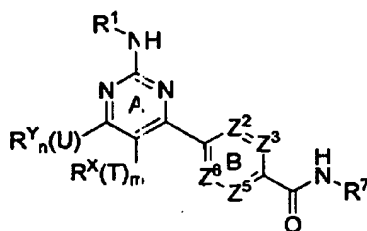
II-C-xii



II-C-xiii

36. (Canceled)

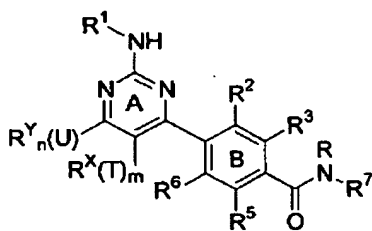
37. (Previously presented) The compound of claim 1, wherein Z^4 is CR^4 , and R^4 is $C(O)N(R)(R^7)$, wherein R^7 is $(CH_2)_t-Y-R^8$, wherein t is 0, 1 or 2, wherein Y is a bond or is O, S, NR^9 , $-OCH_2-$, $-SCH_2-$, $-NR^9CH_2$, $O(CH_2)_2-$, $-S(CH_2)_2$, or $-NR^9(CH_2)_2$, and wherein R^8 is Ar^2 , or R^8 and R^9 , taken together with the nitrogen atom, form a 5-8 membered heterocyclyl or heteroaryl ring having 1-3 heteroatoms independently selected from nitrogen, oxygen or sulfur and compounds have formula II-D:



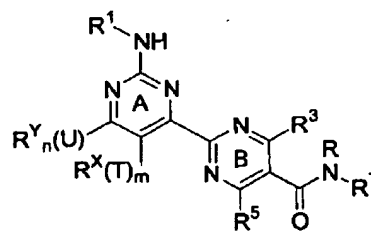
II-D

38. (Previously presented) The compound of claim 37, wherein ring B is selected from i, ii, iii, iv, vi, viii, ix, xii, or xiv and compounds have one of formulas II-D-i, II-D-ii, II-D-iii, II-D-iv, II-D-vi, II-D-viii, II-D-ix, II-D-xii, or II-D-xiv:

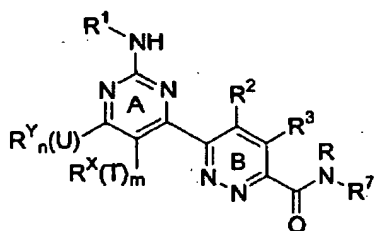
Applicants: Mark Ledebner et al.
 Application No.: 10/700,333



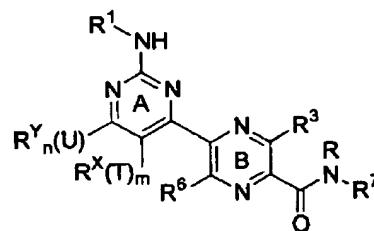
II-D-i



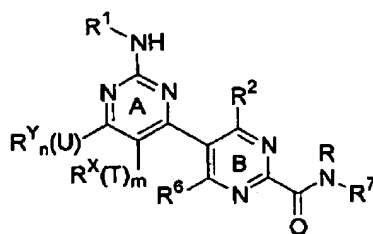
II-D-ii



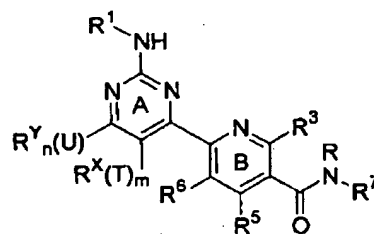
II-D-iii



II-D-iv

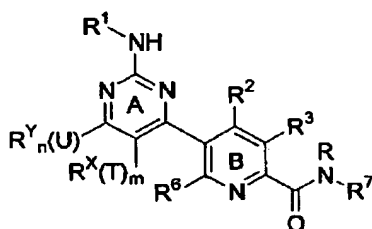


II-D-vi

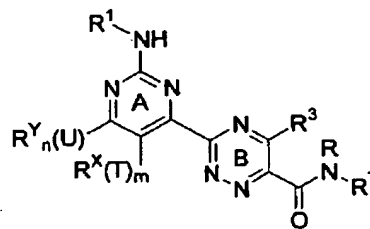


II-D-viii

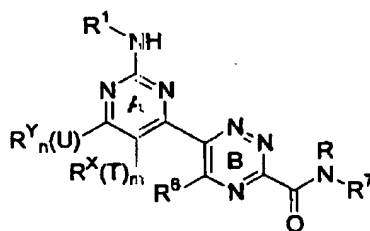
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II-D-ix



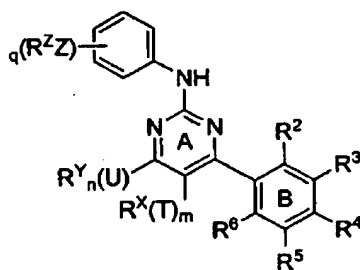
II-D-xii



II-D-xiv

39. (Canceled)

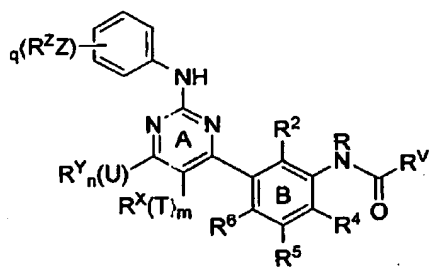
40. (Previously presented) The compound of claim 1, where R¹ is optionally substituted phenyl and ring B is an optionally substituted phenyl group and compounds have the general formula IV:



IV

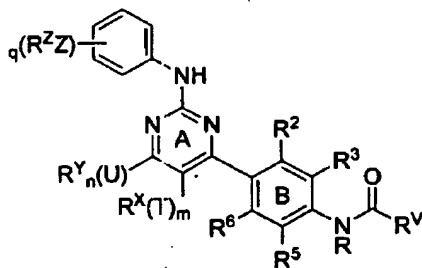
41. (Previously presented) The compound of claim 40, wherein, R³ is NRCOR⁷ and compounds have the general formula IV-A-(i):

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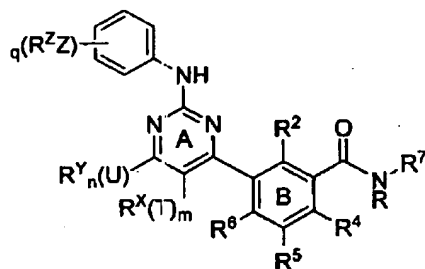
IV-A(i)

42. (Previously presented) The compound of claim 40, wherein R^4 is $NRCOR^7$ and compounds have the general formula IV-B-(i):



IV-B-(i)

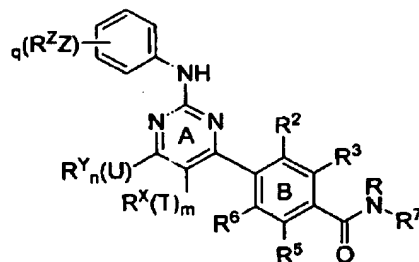
43. (Previously presented) The compound of claim 40, wherein R^3 is $CONRR^7$ and compounds have the general formula IV-C-(i):



IV-C-(i)

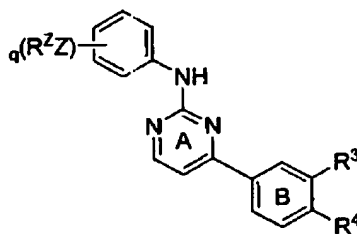
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44. (Previously presented) The compound of claim 40, wherein R^4 is CONRR^7 and compounds have the general formula IV-D-(i):



IV-D-(i)

45. (Currently amended) The compound of claim 40, wherein R^1 is optionally substituted phenyl, ring A is pyrimidinyl, ring B is phenyl, and R^2 , R^5 , and R^6 are each hydrogen, and compounds have the general formula VI:



VI

46. (Currently amended) The compound of claim 40 or 45, wherein
 (a) q is 0 or 1 and ZR^Z is $-\text{NH}_2$, $-\text{OH}$, C_{1-4} alkoxy, or $-\text{SO}_2\text{NH}_2$;
 (b) R^3 is NRCOR^7 , wherein R^7 is $(\text{CH}_2)_t\text{-Y-R}^8$, and t is 0, Y is a bond, and R^8 is phenyl (a), or is an optionally substituted heteroaryl moiety selected from one of groups b through r , and wherein r is 0 or 1, and WR^w substituents are halogen, C_{1-4} alkyl, $-(\text{R})_2$, $-\text{OR}$, $-\text{SR}$, $-\text{SO}_2\text{N}(\text{R})_2$, $-\text{N}(\text{R})\text{SO}_2\text{R}$, $-\text{N}(\text{R})\text{COR}$, $-\text{N}(\text{R})_2$, $-\text{CH}_2\text{OR}$, $-\text{CH}_2\text{N}(\text{R})_2$, or $-\text{CH}_2\text{SR}$; and
 (c) R^4 is hydrogen.

47. (Previously presented) The compound of claim 40 or 45, wherein:

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- (a) q is 0 or 1 and ZR^Z is $-NH_2$, $-OH$, C_{1-4} alkoxy, or $-SO_2NH_2$;
- (b) R^3 is $CONRR^7$, wherein R^7 is $(CH_2)_t-Y-R^8$, and t is 0, Y is a bond, and R^8 is phenyl (a) or is an optionally substituted heteroaryl moiety selected from one of groups b through r , and wherein r is 0 or 1, and WR^W substituents are halogen, C_{1-4} alkyl, $-(R)_2$, $-OR$, $-SR$, $-SO_2N(R)_2$, $-N(R)SO_2R$, $-N(R)COR$, $-N(R)_2$, $-CH_2OR$, $-CH_2N(R)_2$, or $-CH_2SR$; and
- (c) R^4 is hydrogen.

48. (Previously presented) The compound of claim 40 or 45, wherein:

- (a) q is 0 or 1 and ZR^Z is $-NH_2$, $-OH$, C_{1-4} alkoxy, or $-S(O)_2NH_2$;
- (b) R^4 is $NRCOR^7$, wherein R^7 is $(CH_2)_t-Y-R^8$, and t is 0, Y is a bond, and R^8 is phenyl (a) or an optionally substituted heteroaryl moiety selected from one of groups b through z , and wherein r is 0 or 1, and WR^W substituents are halogen, C_{1-4} alkyl, $-(R)_2$, $-OR$, $-SR$, $-SO_2N(R)_2$, $-N(R)SO_2R$, $-N(R)COR$, $-N(R)_2$, $-CH_2OR$, $-CH_2N(R)_2$, or $-CH_2SR$; and
- (c) R^3 is hydrogen.

49. (Previously presented) The compound of claim 40 or 45, wherein:

- (a) q is 0 or 1 and ZR^Z is $-NH_2$, $-OH$, C_{1-4} alkoxy, or $-S(O)_2NH_2$;
- (b) R^4 is $CONRR^7$, wherein R^7 is $(CH_2)_t-Y-R^8$, and t is 0, Y is a bond, and R^8 is phenyl (a) or an optionally substituted heteroaryl moiety selected from one of groups b through z , and wherein r is 0 or 1, and WR^W substituents are halogen, C_{1-4} alkyl, $-(R)_2$, $-OR$, $-SR$, $-SO_2N(R)_2$, $-N(R)SO_2R$, $-N(R)COR$, $-N(R)_2$, $-CH_2OR$, $-CH_2N(R)_2$, or $-CH_2SR$; and
- (c) R^3 is hydrogen.

50. (Previously presented) The compound of claim 40 or 45, wherein:

- (a) q is 0 or 1 and ZR^Z is $-NH_2$, $-OH$, C_{1-4} alkoxy, or $-S(O)_2NH_2$;

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- (b) R^3 is NRCOR^7 , wherein R^7 is $(\text{CH}_2)_t\text{-Y-R}^8$, and t is 0 or 1, Y is NR^9 , and R^8 and R^9 , taken together with the nitrogen atom, form a group selected from s , t , u , or v , and wherein r is 0 or 1, and WR^w substituents are halogen, $\text{C}_{1-4}\text{alkyl}$, $-(\text{R})_2$, $-\text{OR}$, $-\text{SR}$, $-\text{SO}_2\text{N}(\text{R})_2$, $-\text{N}(\text{R})\text{SO}_2\text{R}$, $-\text{N}(\text{R})\text{COR}$, $-\text{N}(\text{R})_2$, $-\text{CH}_2\text{OR}$, $-\text{CH}_2\text{N}(\text{R})_2$, or $-\text{CH}_2\text{SR}$; and
 (c) R^4 is hydrogen.

51. (Previously presented) The compound of claim 40 or 45, wherein:

- (a) q is 0 or 1 and ZR^z is $-\text{NH}_2$, $-\text{OH}$, $\text{C}_{1-4}\text{alkoxy}$, or $-\text{S}(\text{O})_2\text{NH}_2$;
 (b) R^3 is CONRR^7 , wherein R^7 is $(\text{CH}_2)_t\text{-Y-R}^8$, and t is 0 or 1, Y is NR^9 , and R^8 and R^9 , taken together with the nitrogen atom, form a group selected from s , t , u , or v , and wherein r is 0 or 1, and WR^w substituents are halogen, $\text{C}_{1-4}\text{alkyl}$, $-(\text{R})_2$, $-\text{OR}$, $-\text{SR}$, $-\text{SO}_2\text{N}(\text{R})_2$, $-\text{N}(\text{R})\text{SO}_2\text{R}$, $-\text{N}(\text{R})\text{COR}$, $-\text{N}(\text{R})_2$, $-\text{CH}_2\text{OR}$, $-\text{CH}_2\text{N}(\text{R})_2$, or $-\text{CH}_2\text{SR}$; and
 (c) R^4 is hydrogen.

52. (Previously presented) The compound of claim 40 or 45, wherein:

- (a) q is 0 or 1 and ZR^z is $-\text{NH}_2$, $-\text{OH}$, $\text{C}_{1-4}\text{alkoxy}$, or $-\text{S}(\text{O})_2\text{NH}_2$;
 (b) R^4 is NRCOR^7 , wherein R^7 is $(\text{CH}_2)_t\text{-Y-R}^8$, and t is 0 or 1, Y is NR^9 , and R^8 and R^9 , taken together with the nitrogen atom, form a group selected from s , t , u , or v , and wherein r is 0 or 1, and WR^w substituents include halogen, $\text{C}_{1-4}\text{alkyl}$, NH_2 , OH , SH , SO_2NH_2 , $\text{C}_{1-4}\text{alkoxy}$, $\text{C}_{1-4}\text{thioalkyl}$, CH_2OR , $\text{CH}_2\text{N}(\text{R})_2$, or CH_2SR ; and
 (c) R^3 is hydrogen.

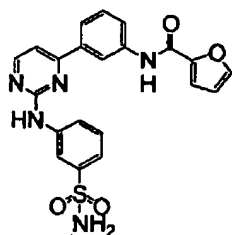
53. (Previously presented) The compound of claim 40 or 45, wherein:

- (a) q is 0 or 1 and ZR^z is $-\text{NH}_2$, $-\text{OH}$, $\text{C}_{1-4}\text{alkoxy}$, or $-\text{S}(\text{O})_2\text{NH}_2$;
 (b) R^4 is CONRR^7 , wherein R^7 is $(\text{CH}_2)_t\text{-Y-R}^8$, and t is 0 or 1, Y is NR^9 , and R^8 and R^9 , taken together with the nitrogen atom, form a group

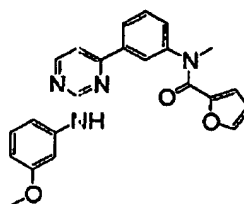
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selected from s, t, u, or v, and wherein r is 0 or 1, and WR^w substituents are halogen, C_{1-4} alkyl, $-(R)_2$, $-OR$, $-SR$, $-SO_2N(R)_2$, $-N(R)SO_2R$, $-N(R)COR$, $-N(R)_2$, $-CH_2OR$, $-CH_2N(R)_2$, or $-CH_2SR$; and
 (c) R^3 is hydrogen.

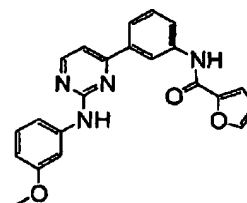
54. (Previously presented) The compound of claim 1, having one of the following structures:



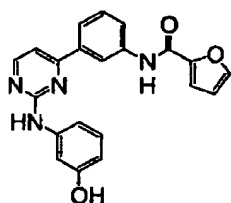
IV-A(i)-1



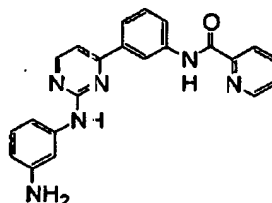
IV-A(i)-2



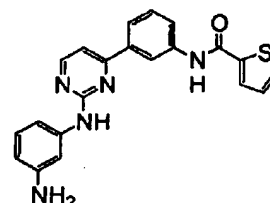
IV-A(i)-3



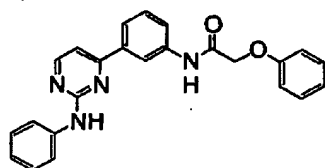
IV-A(i)-4



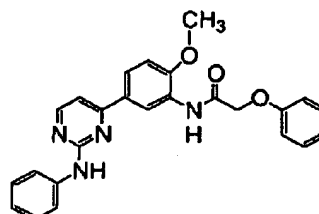
IV-A(i)-5



IV-A(i)-6

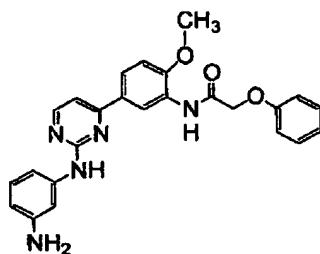


IV-A(i)-7

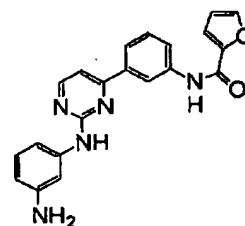


IV-A(i)-8

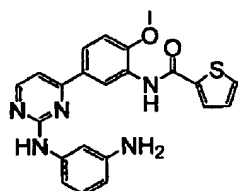
Applicants: Mark Ledebor et al.
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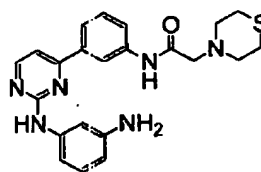
IV-A(i)-9



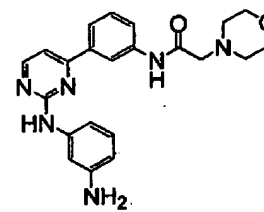
IV-A(i)-10



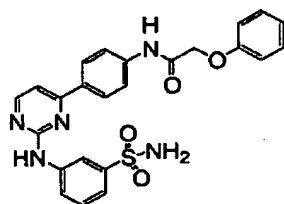
IV-A(i)-11



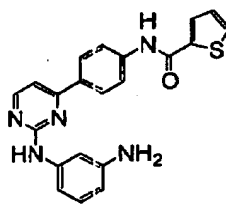
IV-A(i)-12



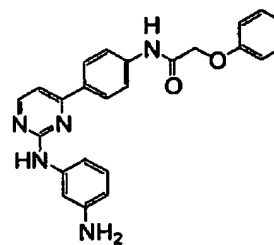
IV-A(i)-13



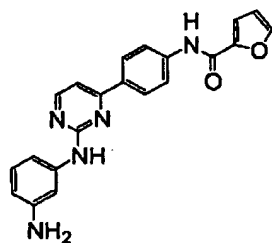
IV-B(i)-1



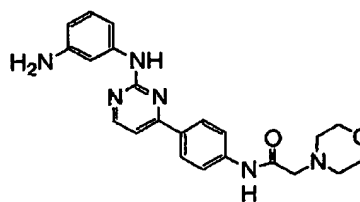
IV-B(i)-2



IV-B(i)-3

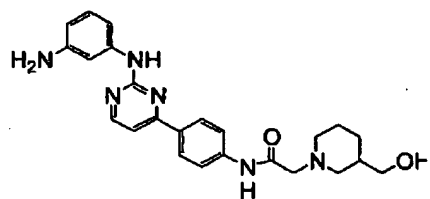


IV-B(i)-4

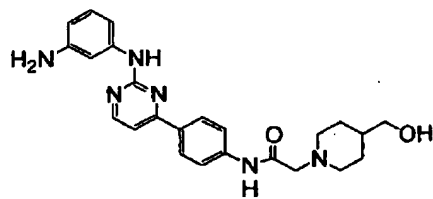


IV-B(i)-5

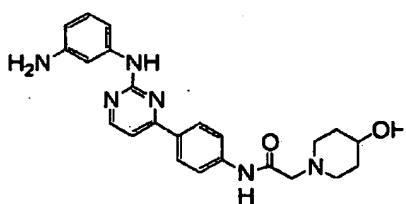
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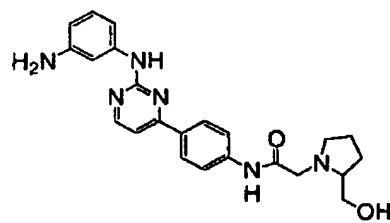
IV-B(i)-6



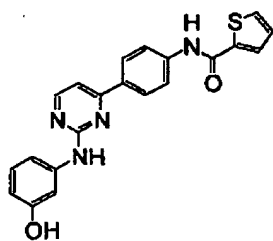
IV-B(i)-7



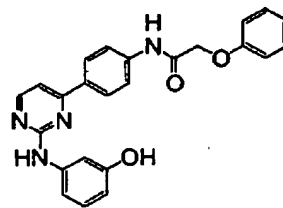
IV-B(i)-8



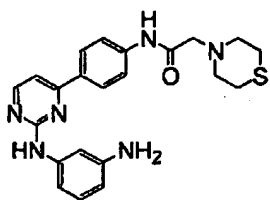
IV-B(i)-9



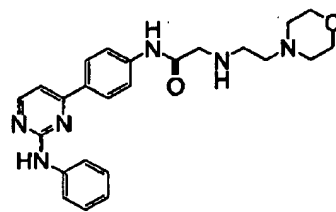
IV-B(i)-10



IV-B(i)-11

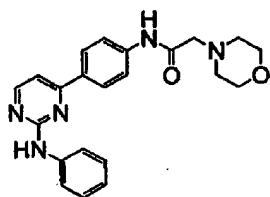


IV-B(i)-12

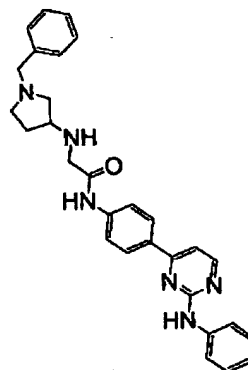


IV-B(i)-13

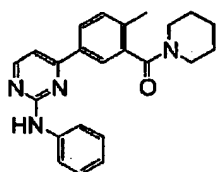
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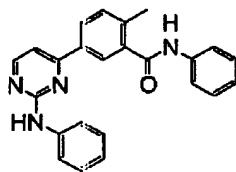
IV-B(i)-14



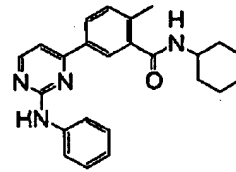
IV-B(i)-15



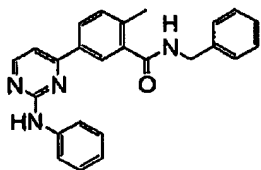
IV-C(i)-1



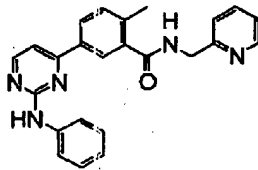
IV-C(i)-2



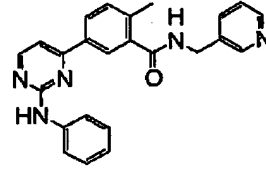
IV-C(i)-3



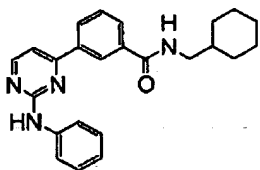
IV-C(i)-4



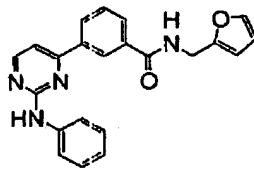
IV-C(i)-5



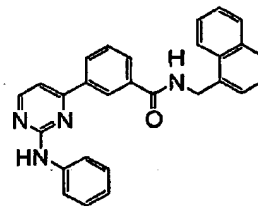
IV-C(i)-6



IV-C(i)-7

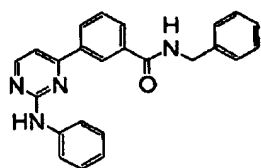


IV-C(i)-8

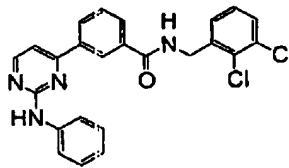


IV-C(i)-9

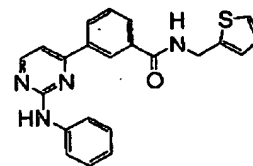
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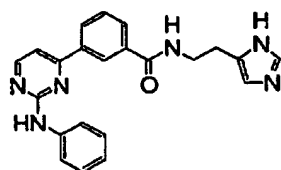
IV-C(i)-10



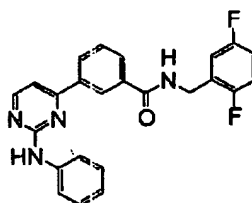
IV-C(i)-11



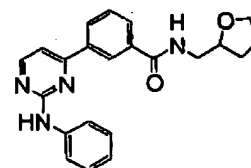
IV-C(i)-12



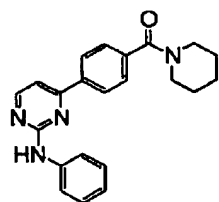
IV-C(i)-13



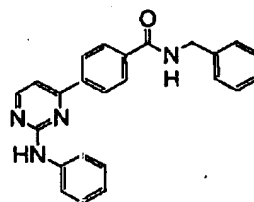
IV-C(i)-14



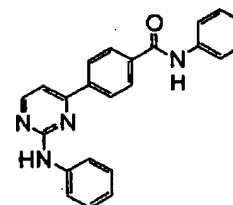
IV-C(i)-15



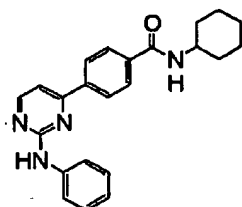
IV-D(i)-1



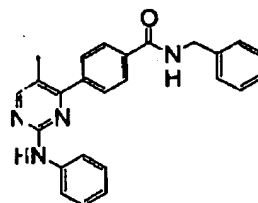
IV-D(i)-2



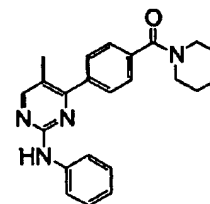
IV-D(i)-3



IV-D(i)-4

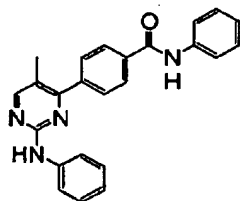


IV-D(i)-5

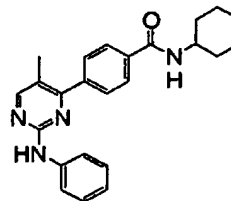


IV-D(i)-6

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IV-D(i)-7



IV-D(i)-8

55. (Original) A pharmaceutical composition comprising a compound according to claim 1, and a pharmaceutically acceptable carrier, adjuvant, or vehicle.

56. (Currently amended) The composition of claim 55, further comprising an additional therapeutic agent selected from ~~a chemotherapeutic or anti-proliferative agent, a treatment for Alzheimer's Disease, a treatment for Parkinson's Disease, an agent for treating Multiple Sclerosis (MS), a treatment for asthma, an agent for treating schizophrenia, an anti-inflammatory agent~~ [[,]] or an immunomodulatory or immunosuppressive agent, ~~a neurotrophic factor, an agent for treating cardiovascular disease, an agent for treating destructive bone disorders, an agent for treating liver disease, an agent for treating a blood disorder, or an agent for treating an immunodeficiency disorder.~~

57. (Currently amended) A method of inhibiting JAK kinase activity in a biological sample in vitro ~~or a patient~~, comprising the step of contacting said biological sample ~~or patient~~ with:

- a) the composition of claim 55; or
- b) the compound of claim 1.

58. (Currently amended) A method of treating or lessening the severity of a disease or disorder selected from rheumatoid arthritis, allergic or type I hypersensitivity reaction, asthma, familial amyotrophic lateral sclerosis (FALS) or

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~~transplant rejection, an immune response, an autoimmune disease, a
neurodegenerative disorder, or a solid or hematologic malignancy~~ comprising
administering to a patient in need thereof a compound of claim 1 or a composition of
claim 55.

59. (Canceled)